

The Case for
Reform
of
the
Australian University System

Detailed Response to
Review of Higher Education
Discussion Paper (June 2008)

by

Dr. Dario Toncich
Dr. Rowan Deam
Dr. David Liley
Dr. Engida Lemma
Mr. John Bishop

"Insanity: Doing the same thing over and over again and expecting different results"
- Albert Einstein

Executive Summary

This document provides a detailed response to the Australian Government's June 2008 "Review of Higher Education" Discussion Paper.

The authors believe that there are serious and fundamental structural flaws in the current Australian system of universities which need to be addressed as an outcome of the Review. These can only be addressed by far reaching reform. This document details the flaws; provides the statistical data to substantiate the untenable position that currently exists, and benchmarks Australian universities against international leaders in order to highlight the performance chasm between Australia's universities and world leading institutions.

Specifically, the structural problems with Australian universities relate to:

- University size in terms of academic/research staff numbers.
- University resources in terms of assets/endowments.
- Student:Staff ratios and their impact on learning and research performance.
- Claimed levels of university specialisation in Australia and their relevance to learning and research performance.

Our analysis is based upon a combination of DEST/DEEWR data (2006), combined with the results of two Melbourne Institute studies (2006 and 2007) which were, of themselves, largely based upon DEST/DEEWR data. Any number of combinations of national performance data could have been employed for the analysis but we believe that the portrait that is presented herein would remain the same. The trends are compelling and disturbing – they highlight that the majority of Australia's universities are simply too small and under-resourced to be internationally competitive or, indeed, to even serve the needs of local students in an increasingly sophisticated university sector.

We therefore assert (and substantiate) that the Australian system of universities is dilute, fragmented, inefficient and suffers from extensive duplication and waste of tax-payer funds, which further erodes the national position and overall credibility. We also recommend that fundamental reform of the system commences prior to any increased investment of tax-payer funds in the system.

We submit (and substantiate) that the logical forward path for the Australian university sector is the establishment of a state based university system (in each Australian state), along the lines of the University of California model (the world's finest public sector university structure).

This would:

- Create international critical mass in each node of the state system.
- Rationalise the sector; administration and governance in each state.
- Enable sharing of high cost infrastructure and facilities.
- Preserve the historical identities of universities while reducing overheads.
- Release funds to facilitate an increase in the national university knowledge base (academic/research staff) to an internationally competitive level.
- Eliminate duplication and waste.
- Create a world class university system to replace a collection of decaying fiefdoms that are misaligned with international expectations.

A staged implementation of such a system can take place with short, medium and long term benefits.

The data we present herein shows that, in the absence of such wide-ranging reform, a number of Australian universities will either need to close, merge or become faculties of larger institutions because they exhibit profound structural flaws that preclude growth, development or even a competitive existence in their present form – at best, some can only be described as technical colleges which carry the title of university.

Based on our analysis, we provide a listing of Australia's public-sector universities and rank their underlying structural performance to highlight the urgent need for wide-ranging reform.

1. Introduction

This is a detailed response to the Australian Government's June 2008 "*Review of Higher Education*" Discussion Paper.

The authors commence this response by expressing their disappointment with the Discussion Paper, for the following reasons:

- (i) As the first review of higher education in a number of years, it was expected that the Paper would provide stakeholders with an international benchmarking of Australia's higher education sector, together with a detailing of structural and strategic flaws in the system, so that respondents could provide input on possible forward directions.
- (ii) We believe that the Paper has focused on operational, bureaucratic and parochial minutiae (at best secondary issues), rather than the fundamental structural/strategic and international positioning issues that need to be addressed in the first instance.
- (iii) By virtue of (i) and (ii), the Paper has artificially skewed the entire Review of Higher Education towards a discussion of minor variations to current practice, rather than fundamental reform (i.e., the much publicised "*education revolution*").
- (iv) The Paper has blurred the functions of universities, TAFE and commercial training providers into a single "higher education" entity, making it difficult to understand the specific context of the document or the agenda that is being espoused.
- (v) The Paper makes an assumption that what currently exists in the context of universities is fundamentally acceptable to Australians in its present form. We believe that if Australians were apprised of the true current state of Australian universities they would be astonished by the discrepancies relative to international performers, and would expect and demand significant strategic reform – not further tinkering at the margins.

Of the 35 questions that have been posed in the Discussion Paper, the *only* strategic question (ironically, No. 31) is,

"Is it time to reshape tertiary education in Australia and streamline financing and regulatory arrangements?"

This detailed response largely deals with this question, as it pertains to universities, and its subsequent impact on the other operational questions.

2. Functional Definition of Universities

One of the most disappointing aspects of the Discussion Paper is that it has confused the role of universities in Australia with that of service providers involved in the delivery of "useful information" – for socio-economic or business outcomes.

Herein, we adopt the university definition provided by Wilhelm Frieher von Humboldt, the architect of the first university to combine learning and research (the University of Berlin, 1810):

"...It is a further characteristic of higher institutions of learning that they treat knowledge as a not yet wholly solved problem and are therefore never done with investigation and research. This in contrast to the schools which take as their subject only the completed and agreed upon results of knowledge and teach these. This difference totally changes the relationship between teacher and student from what it was when the student attended school. In the higher institutions, the teacher no longer exists for the sake of the student; both exist for the sake of learning."

This definition has not changed in two centuries and is a definition implicit to the world's leading universities. It clearly differentiates the role of universities from that of skills providers, (i.e., TAFE sector; secondary and primary school systems, and commercial higher education trainers) – something which the Discussion Paper has failed to do.

By way of practical example of the von Humboldt model, consider that Hewlett Packard did not emerge from Stanford because the University was "business focused" or because it had a "commercialisation and innovation strategy" – the computing/technology giant emerged from the simple von Humboldt relationship between individual students and individual academic staff with mutual interests in learning. We therefore contend that the von Humboldt relationship is intrinsic to the role of Australian universities, and to any collateral commercial and socio-economic outcomes. Stanford has been successful because it has focused on this fundamental relationship between academics and students. Australia would do well to learn from this example rather than endeavouring to superimpose business slogans over universities which are, in practice, public service departments run by public servants with limited appreciation of business imperatives.

We also express concern at the demeanour of the Discussion Paper which has an underlying theme of blurring the boundaries between TAFE and universities with artificial articulation pathways. TAFE and universities have equally important, but very different roles, and they should not be confused. Universities have a fundamental role in learning related to problems which are not fully resolved or resolvable. TAFE has an important role in training professionals in the application of agreed/accepted knowledge and practice.

While there are always good examples of students who have progressed from TAFE to Doctoral level, and from Doctoral level to technical qualifications – these are exceptions. The mindsets and learning models required for TAFE study and university study are significantly different. It therefore goes without saying that any higher education system which has as its goal a high level of articulation (from TAFE to university) demonstrates a profound lack of understanding of both TAFE and university education.

In response to Question 1 on the Discussion Paper (How adequate is the statement of functions and characteristics of higher education in modern Australia?):

Any definition of higher education in Australia must recognise and articulate the intrinsic differences in the roles of universities, TAFE and other forms of tertiary training – to do otherwise undermines all three systems.

In response to Question 15 on the Discussion Paper (To what extent should vocational education and training and higher education continue to have distinctive missions and how should these missions be defined?):

As per the von Humboldt definition - Universities and TAFE have clear distinctions in mission. TAFE colleges transfer the results of agreed knowledge. Universities focus on learning related to partially or wholly unsolved problems.

3. The Need for Change to Australian Higher Education

3.1 The International Context

We submit that university performance and international standing (in learning and research) are founded upon four basic elements:

- (i) Total number of academic/research staff in a university (critical mass)
- (ii) Resources, assets and endowments (critical mass)
- (iii) Geographic location and proximity to financial and/or technical hubs
- (iv) History/perceived prestige.

Of these, Element (iv) is the least significant, as exemplified by the Jiao Tong ratings which show that newer universities (e.g., Stanford and Cal-Tech) markedly outperform historic and prestigious universities such as Oxford and Bologna. The Australian university system has no control over (iii) or (iv) in the international context*and so, at its most basic level, this review only need consider (i) and (ii).

Table 1 shows how a selection of Australian universities compare with international leaders. This data highlights that, even in the best case examples, in their present form, Australia's universities are not competitive with leading international institutions – nor will they ever be. Being ranked in the "Top 100" universities is vastly different to being ranked in the "Top 5" or "Top 10". And, while the leading international universities, listed in Table 1, maintain modest academic (i.e., "faculty") staffing levels, they dwarf Australian universities when research-only staff are added as output drivers.

<i>University</i>	<i>Current Jiao Tong Ranking</i>	<i>Academic/Research Staff</i>	<i>Endowments or "Available for Sale" Financial Assets 2006 (A\$ Billion)</i>	<i>Gifts 2006 (A\$ Million)</i>
Harvard	1	13,000	30	?
Cambridge	2	8,600	4.4+Colleges	?
Stanford	3	4,500	15	832
Uni. of California:				
- Berkeley	4	5,464	3.4	
- San Diego	13	3,557	1.2	
- Los Angeles	14	5,550	3	
- San Francisco	18	4,180	0.4	
- Santa Barbara	35	1,399	0.8	
- Davis	42	4,039	1.4	
- Irvine	44	2,798	0.9	
Total (UC)		39,000	12	450
MIT	5	4,800	9	330
Yale	11	4,100	24	?
ANU	54	1,910	1.1	8.4
University of Melbourne	78	2,747	1.2	23
University of Ballarat	Not Ranked	211	0	0.042
Total Australian University System		36,000	4.3	159

Table 1 – Selected Data Related to International Positioning of Australian Universities

Table 2 benchmarks the entire Australian university system with the University of California.

	<i>Academic/ Research Staff</i>	<i>Campuses</i>	<i>Total Students (2006)</i>	<i>Student/Staff Ratio (2006)</i>	<i>Endowments (Available for Sale Assets) 2006</i>	<i>Gifts (2006)</i>
Total Australian University System (Population 21M)	36,000	37	980,000	27:1	\$4.3 B	\$159M
University of California (Population 32M)	39,000	10	214,298	5:1	\$12.0 B	\$450M

Table 2 – Benchmark of Entire Australian University System Against University of California

Table 2 shows that the disparities between the average performance of Australia's universities and the world leader in public sector universities are staggering. It does not show that the state of California is home to numerous other international universities which also dwarf Australia's average performance.

Table 2 particularly highlights the disparity in the student:staff ratio which, as we will later demonstrate, is a central factor in overall learning and research performance of universities. In this paper, we therefore raise the student:staff ratio as an indicator of the "depth of knowledge" that resides within universities – we do not discuss its relevance to industrial relations issues.

Student:staff ratios directly relate to the level (breadth and depth) of expertise that is made available to students (in terms of learning and research). It is this expertise that differentiates universities from other learning providers such as TAFE, secondary schools, etc. Table 2 highlights that, on average, Australia's universities are more akin to TAFE colleges than they are to the von Humboldt definition of universities, as embodied in international systems such as the University of California.

Within the Australian context, Figure 1 shows the linear relationship between overall "learning and research" performance (as derived from the Melbourne Institute 2006 Study by Williams and Van Dyke) and academic/research staffing levels at each Australian University (DEST 2006). The picture is simple, clear and unequivocal – the higher the number of academic/research staff in an Australian university, the better the overall performance. This highlights the futility of successive government attempts to find complex analytical/management tools to improve the overall learning and research performance of Australian universities.

Figure 1 also highlights the limitations of the "Go8" concept – specifically, it is clear that the Australian university system is composed of 37 similar public service entities, each of which (as one would expect) has overall learning and research outputs proportional to its academic/research staff numbers. Performance over and above the expected linear relationship is only achieved when universities follow the trend of international leaders and have higher proportions of research only staff, such as is the case with ANU. This simple, linear relationship has profound implications on the expenditure of taxpayer funds on complex research analysis systems such as RQF and ERA, when the broad outcomes are already well known by all.

In examining Tables 1 and 2 and Figure 1 together, one can also see why Australia's universities are poor international performers – the entire Australian university system has fewer academic/research staff than the University of California (UC) – individual campuses of UC are twice the size of Australia's largest universities. Harvard University is one third the size of all Australian universities combined – Harvard's endowment is larger than the combined total of the "available for sale" financial assets of all Australian universities and the new Higher Education Endowment fund.

In Australia, however, instead of pursuing structural reform of the sector to reposition it on an international footing, successive federal governments have been content to adopt an approach of

"measuring and meddling in minutiae", perhaps in the slim hope that persistent application of bureaucratic methods will convert universities such as Ballarat into universities such as Harvard. Tables 1 and 2, and Figure 1, unequivocally show why meddling in minutiae will not address Australia's higher education problems.

The current Discussion Paper carries an undercurrent that further meddling in minutiae will occur as an outcome of this Review. We strongly urge the Review Panel to seek a bold new path for Australia's universities.

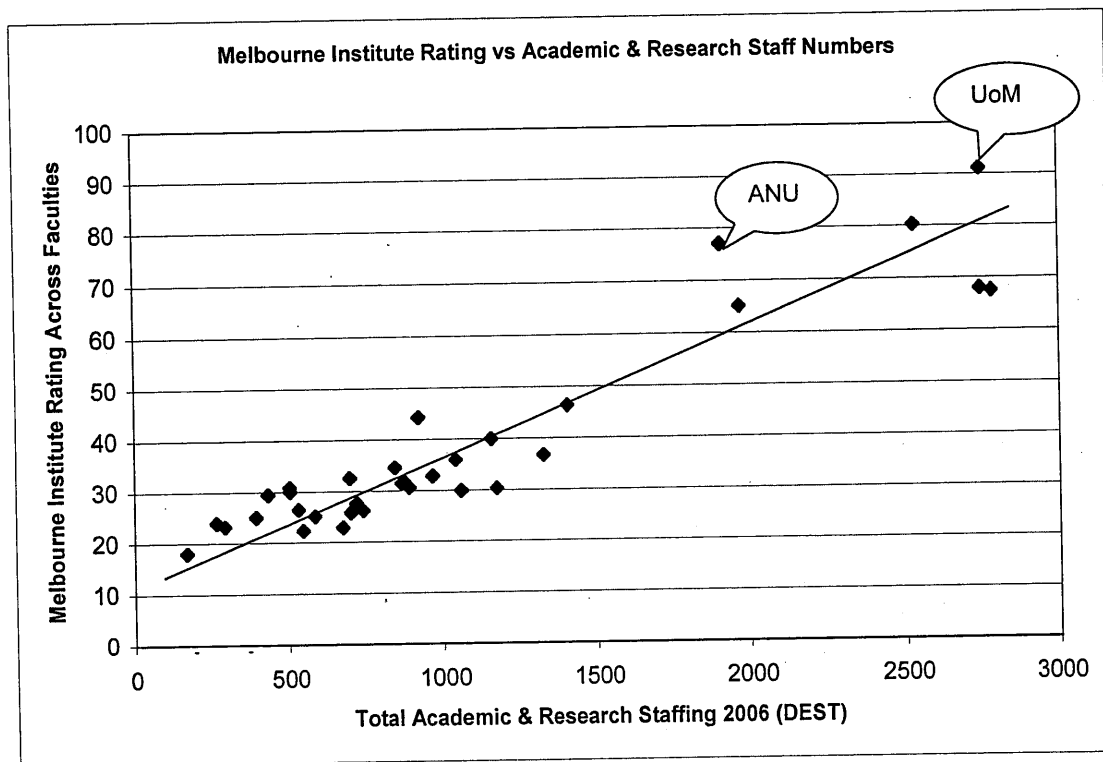


Figure 1 – Relationship Between Overall Learning/Research Performance and University Size in Academic/Research Staff Numbers

Of further concern in the Discussion Paper is the simplistic linking of the international standing and quality of Australia's universities with the nation's disproportionately high success in attracting international students. This success has, however, been opportunistic and based upon Australia's early entry into the Asia Pacific education market, at a time when Asia's educational standards were not up to entry levels required by leading universities in North America and Europe. The success has also been founded upon former glories and excellence in the Australian university system, which, for a number of reasons, no longer exist throughout the sector.

Growth in international student numbers has fundamentally been based on continual lowering of academic standards (i.e., broadening the statistical bell curve), particularly in Australian Master's degree programs for international students, which are now derisively referred to as "*Australian Taxi Drivers Licences*" for reasons which are self-evident to those who work in the sector. The Discussion Paper has also confused genuine demand for an Australian university education with the desire for many students to settle in Australia as residents, which is often implicitly and explicitly linked to international demand for places.

It would be naïve in the extreme for the Review Panel to recommend a blind continuation of this practice over the coming decade in the vain hope that this will preserve one of Australia's largest exports. The current practice of lowering educational standards is effectively eroding the entire core of Australia's ability to export education to high calibre international students. In effect, the approach is undermining the rigour of a university system that was established through tax-payer investment over more than a century, with focus on the development and maintenance of standards.

In response to Question 22 of the Discussion Paper (Are there any unintended consequences of the current approach to internationalisation of higher education in Australia?):

The unintended consequence of internationalisation of Australian higher education has been a dramatic lowering of standards through the creation of a "fee for degree" industry, and the equating of international success in fee-for-degree services as "international standing"

In response to Question 23 of the Discussion Paper (What is an appropriate role for government in assisting the Australian higher education system to internationalise? On what principles should this role rest and what purposes should it serve?):

The role of the government in assisting Australian higher education to internationalise is to create world class institutions. This can only be achieved by reducing the total number of universities in Australia and creating large players with critical mass that can compare with the world's best.

3.2 Distribution and Dilution of Capital/Infrastructure

3.2.1 Overall Distribution of Assets and Inconsistencies

Figure 2 shows the non-current assets (i.e., physical and financial resources composed of infrastructure, facilities, investments, etc.) per student across Australia's universities, as derived from DEST 2006 data.

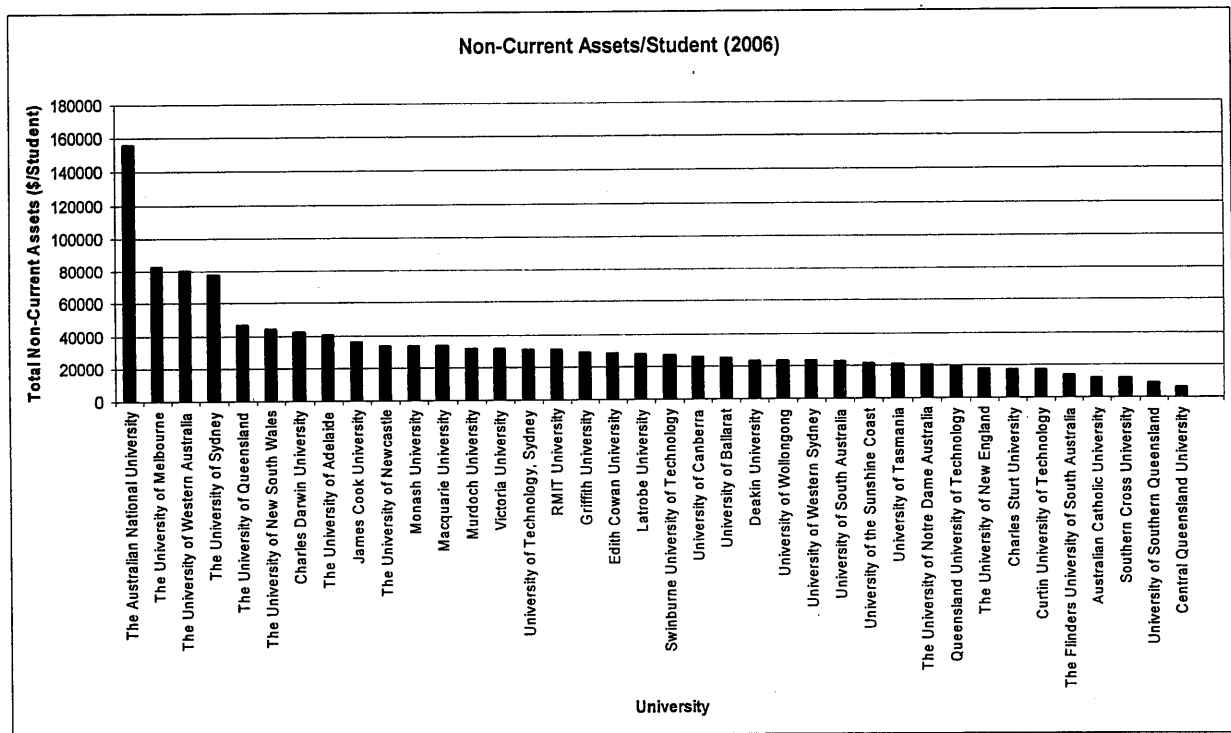


Figure 2 – Non-Current Assets (Resources)/Student (DEST 2006 Figures)

Figure 2 highlights:

- Dilution of national resources across the Australian university sector
- Disparity in resources available to students across universities.

Some of the disparity arises from older institutions having (by default) possession of valuable inner city real estate, but such assets also contribute to the vibrancy/quality of the overall learning experience. However, the disparity in resources raises three important questions:

- Why should students attending public universities with low resource/student ratios, such as Central Queensland (\$6,700/student), be required to pay the same fees as those attending public universities with high ratios, such as ANU (\$156,000/student)?
- If the Federal Government believes that it is possible to have a credible, publicly-funded university with resources of \$6,700/student, why has it allowed other universities to consume tax-payer resources at a level of \$156,000/student as a result of historical legacy?
- Is the disproportionate fee structure that is in place in Australia's universities something that should warrant investigation by the ACCC in the interests of equity and fairness or is there an underlying strategy to the disparity?

The answers to these questions are self evident – Australian universities have been allowed to evolve in an unstructured, *ad hoc* fashion, with higher level biases superimposed over this random structure for political expediency. The unplanned approach has clearly not worked.

Figure 3 shows the overall learning and research performance of Australia's universities (Melbourne Institute 2006) as a function of non-current assets (i.e., physical resources and financial assets).

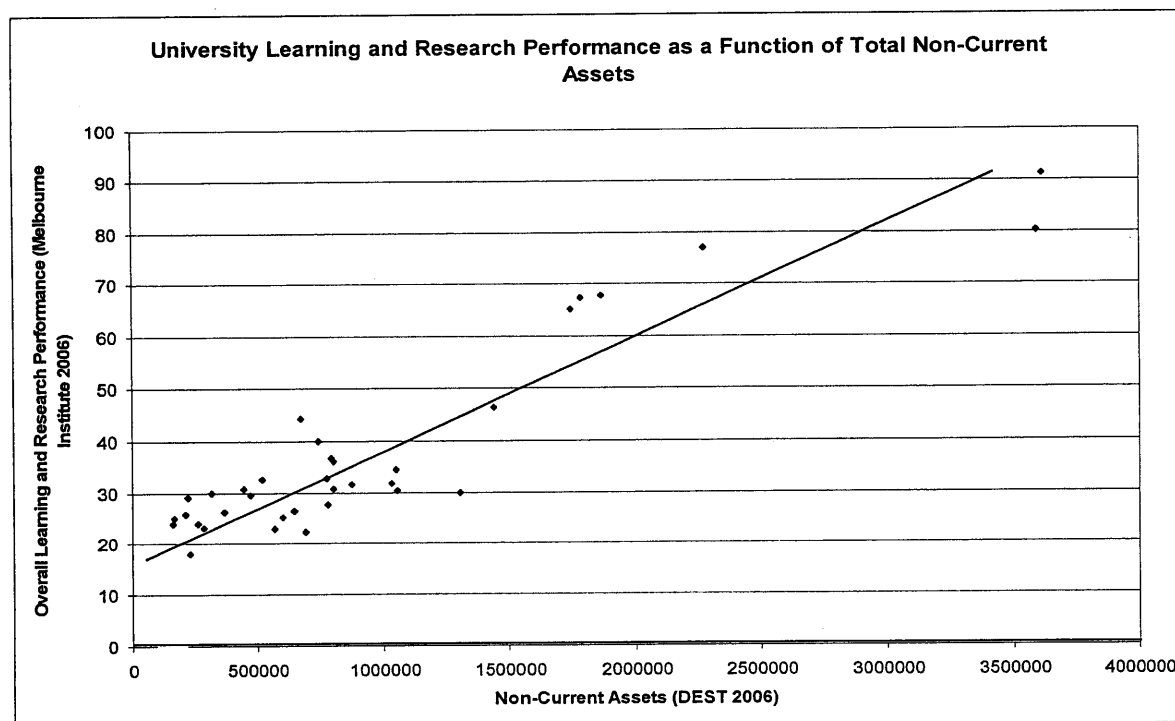


Figure 3 – Performance of Australian Universities as a Function of Resources

Unsurprisingly, the results show that the better a university is resourced in terms of assets, the better it performs in learning and research overall. Again, the Go8 distinction here is manifest as a function of asset size rather than some intangible historical/prestige factor.

3.2.2 Dilution and Under-Utilisation of National University Asset Base

The DEST 2006 figures show that Australia currently has some five billion dollars of assets tied up in 16 universities which individually have less than 600 academic/research staff – that is, universities which are the size of faculties and which will never compete internationally in any sense other than attracting low level international coursework students.

The bank interest earned on the liquidated assets of the “sub-600” small universities is sufficient to pay the salaries of all their academic/research staff if their programs are transferred to larger institutions at an incremental cost – thereby freeing up the bulk of their current operating grants for better learning and research outcomes at an international level.

Figure 2 does not show the other underlying problem with the current system of universities, which is the under-utilisation of resources across the sector. The bulk of physical resources only have a 0.2 duty cycle (i.e., 24 teaching weeks/year x 1 shift – no weekends). In other words, there is a vast amount of national capital tied up in maintaining small institutions whose activities can be shifted to larger entities (at incremental capacity cost) with better utilisation; providing higher quality resources/student, and significantly reduced national overheads. At the very least, there is a strong case to consider a network based restructure where specialist nodes have sufficient resources/student to be genuinely competitive at an international level.

In Victoria, some universities have commenced low level discussions for resource sharing in areas such as engineering. We believe this is a positive step but is still predicated on the assumption that existing entities can all continue to offer the same current range of courses. This is not a viable proposition in the long term and more significant structural reform is now required.

3.2.3 Regional and Low Socio-Economic Status (SES) Issues

Australia is one of few nations that does not encourage students to travel in order to improve their educational opportunities and SES – this has led to a fragmented, dilute university system which cannot operate at a high international level. In the United States, it is expected that students need to travel in order to secure an international standard of education and to improve their learning experience – this is also a basic recognition of the sheer scale of investment required to establish and maintain world class institutions and that such investment cannot be made in every small regional town, so that its residents can avoid travel.

We believe that the solution in Australia is to create, as a first priority, a genuinely international university system, and then to address regional and SES issues through generous scholarship funding, travel bursaries, living accommodation allowances, etc. Universities are an international phenomenon and their long-term worth to students and graduates is dictated by their international standing.

It is simply not sensible to expect an international university system to function while hamstrung by a collection of parochial and regional issues. The resources and recurrent costs required to maintain a quality university are prohibitive when considered in the context of regional positioning. The problem is analogous to maintaining many small rural hospitals which cannot provide meaningful, modern health care because they cannot provide high cost medical infrastructure such as MRI and PET. There is, however, every reason to support the establishment of specialist regional university nodes/faculties in areas where these are relevant and are able to perform at a high level.

It is therefore not reasonable to expect that generic, regional universities will perform well when they exist for no other purpose than to serve a region – a wide range of performance data supports this view. In looking at the geographic distribution of assets in Figure 2, it is apparent that universities in regional and low SES areas have been established (and then left to operate) on resource levels that are not commensurate with mainstream universities in Australia, and completely incompatible with international requirements. Figures 1 and 3 show why such universities cannot perform – their staffing is too low to achieve critical mass, and they have insufficient resources (assets). The fragmented and dilute end result is a system which is a political solution only, and does not provide genuine opportunities for high calibre students in regional or low SES areas.

The point here is clear - as international entities competing in a global environment, universities should not be simplistically used as a tool to resolve regional and socio-economic problems.

In response to Question 8 of the Discussion Paper (Should there be a national approach to improving Indigenous and low SES participation and success in higher education?):

Genuine Improvements in indigenous and low SES participation and success in higher education cannot be achieved by the artificial creation and maintenance of lowly funded regional institutions. Universities, like modern hospitals, by nature, need to have large infrastructure and support systems – regional and SES issues therefore need to be tackled by a combination of travel/accommodation bursaries, and the establishment of high calibre regional university nodes (not entire universities). Again this suggests a need to re-evaluate the current university system and apply a systematic networked approach in each state – not an ad hoc collection of fiefdoms each endeavouring to be all things to all people.

3.3 Duplication, Redundancy and Waste – Impact on Student:Staff Ratios

The inefficient dilution/utilisation of national assets across 37 universities is only one small part of the underlying structural problems in Australian universities. The other problems arise from:

- Duplication of facilities, laboratories and libraries
- Duplication of administrative structures and supporting IT systems.

By way of example consider the Victorian scenario where there are currently eight universities with:

- Seven sets of run down engineering facilities
- Eight sets of run down science facilities
- Three sets of medical facilities
- Eight sets of library infrastructure and journals (in an era marked by electronic publication)
- Eight sets of student administration structures, each with its own IT support systems (each with multimillion dollar licence and support fees – constant re-invention)
- Eight human resources departments, each with their own multimillion dollar IT support structures.
- Eight finance departments (each with multimillion dollar IT support systems)
- Eight marketing departments, each trying to differentiate and sell commodity courses provided by public service organisations (against other public service organisations) – all funded by tax-payers.
- Eight chancellery structures with their own building infrastructure, travel budgets and administrative support structures, each costing millions of dollars each year.

These resources were used to support a Victorian total of:

- 9,795 academic/research staff (2006 DEST).
- 249,179 students (2006 DEST).
- A student:staff ratio of approximately 25:1.

Compare this to a networked university structure of ten campuses at the University of California to support:

- 39,000 academic/research staff (2006 University of California Stats.)
- 214,298 students (2006 University of California Stats.)
- A student:staff ratio of approximately 5:1.

This has enabled an integrated and coordinated set of facilities, laboratories and administrative systems to be set up across ten campuses to provide:

- World leading facilities in all chosen disciplines
- Individual campuses of which seven are separately classed as being within the top 50 in the world – one of which is in the top 5 universities in the world.

Student:staff ratios do not necessarily reflect the number of staff actually involved in learning, because research-only staff do not necessarily teach – however, they do reflect the level of knowledge and expertise that is available within a university to maintain the integrity of the learning and research processes through critical mass and peer review of activities. It is this concentration of knowledge that differentiates leading institutions and attracts the finest minds from around the world.

One might then well ask how Victorian universities are able to service 249,179 students with only 9,795 staff? The answer to this is that they operate a technical college model rather than a university model. Australia's universities rely upon the extensive use of sessional staff, who are engaged to reduce costs and make budgets balance in an environment of duplication and waste.

The supreme irony of the Australian university system is that it has subcontracted out its core business (i.e., knowledge and learning) in order to sustain administrative overheads and waste arising from dilution and duplication. This is akin to Toyota subcontracting out its manufacturing activities to cut costs, in order to maintain its levels of clerical staffing at head office. This, however, is the invisible

legacy of the current system of Australian universities – the budgets may balance; students may go through the system but Australia’s universities are, in practice, achieving these outcomes with a technical college model – *not* because they are intrinsically “*more efficient*” and *not* because they have “*outsmarted*” those running the world’s finest universities by having fewer academic/research staff.

Figure 4 shows the performance of Australia’s universities as a function of the student:staff ratio.

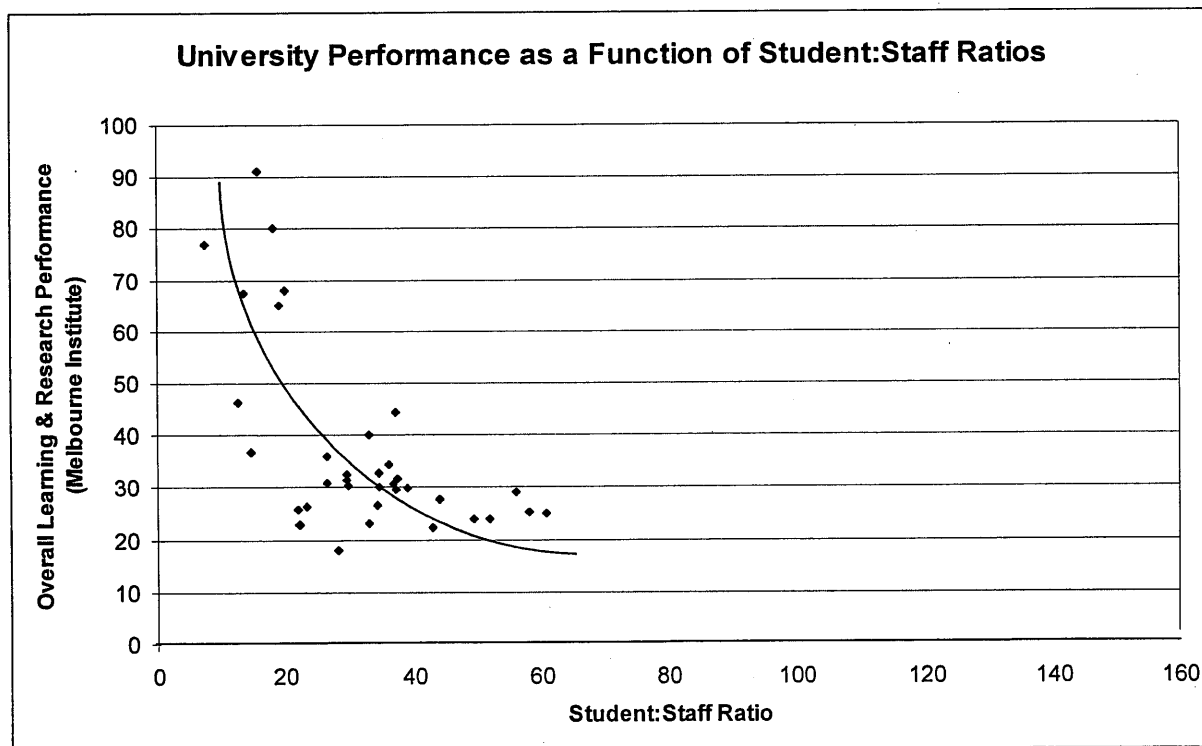


Figure 4 –Overall Learning & Research Performance of Australian Universities (Melbourne Institute) as a Function of Student:Staff Ratio (DEST 2006)

Figure 4 clearly shows that overall university learning and research performance is highly dependent on the student:staff ratio. This is why leading international universities have a low student:staff ratio – this is what defines the depth of knowledge that is available to students, and the knowledge that is available for genuine research and commercialisation outcomes. In Australia, this trend also explains why ANU is nationally one of the nation’s best performers (with a ratio of 8:1), and why universities with high student:staff ratios (more than 60:1) are the nation’s poorest performers. The national average performance is one fifth that of the University of California.

If the number of university students remains approximately constant, then the only solution forward for Australia is to dramatically increase the number of academic (and particularly research) staff in universities. For example, to achieve a national average student:staff ratio of 10:1 (which is only half the performance of the University of California), Australia would need to increase academic/research staff numbers by 62,000 on 2006 figures – an annual expenditure increase of \$6.2 Billion in salaries alone. A significant part of this would be saved by the rationalisation outlined in this submission.

Even marginal improvements in the national student:staff ratio position can only be practically achieved in conjunction with dramatic reductions in duplication and waste, combined with administrative efficiency gains.

To this end consider the plight of the Australian university system by examining the situation in Victoria. The combined size of Victoria’s universities (in academic/research staff) is less than a quarter of the University of California and the student numbers are similar. Victoria’s combined “*available for sale*” asset base is less than one sixth that of the University of California’s endowment

fund. Annual donations to Victorian universities are approximately ten percent of those to the University of California.

At best, Victoria can therefore afford:

- One international set of engineering infrastructure
- One international set of science infrastructure
- One international set of medical infrastructure.
- One international set of library infrastructure.

At most, Victoria should have:

- One, single student administration and IT support system
- One, single human resources department
- One, single marketing department to provide coordinated marketing of public institutions in the state to attract external students, rather than to fund poaching of students from one tax-payer funded organisation to another.
- One, single finance department.
- One chancellery structure.

This picture of duplication and waste (compensated through cost-cutting by subcontracting out of core business) is repeated in every state of Australia and it is a national scandal. Every dollar wasted on duplication is one dollar less that is available for increasing student places and resources for students; lowering student fees; providing support to socially disadvantaged groups, growing the nation, and so on.

Competition and genuine student choice cannot be achieved in Australia by having a collection of public service fiefdoms squandering tax-payers' funds in an artificial contest. Figures 1 and 3 show that, in reality, there is no competition – all the competitors achieve results proportional to staffing levels and resources – no more and no less – there are no “stand-out” performers emerging from the system. Worse still, the public service “competition” that is in place discourages strategic allocation of tax-payer funds across each state and pro-actively encourages duplication and waste.

We strongly recommend that universities should not receive any additional (new) funds without a commitment and timeline for this duplication and waste of tax-payers' money to be removed from the system.

Australia cannot afford to continue with its current system of universities and this Review of Higher Education provides the punctuation mark for change.

In response to Question 28 of the Discussion Paper (What incentives or unintended consequences are there in the arrangements for higher education funding?):

The unintended consequence of the current funding arrangements has been the creation of 37 fiefdoms with duplication, waste, artificial competition and redundancy in each state. The corollary of this is a collection of universities which are not internationally competitive and which provide a sub-standard level of infrastructure and facilities to students – worse still, Australia's universities have subcontracted out their core business of knowledge and learning (through sessional staffing) in order to maintain non-core overheads such as administration and duplicated infrastructure and governance.

In response to Question 29 of the Discussion Paper (To what extent are the current funding models adequate to secure the future of Australia's higher education sector? If there are better models, what are they?):

The current funding models do not serve the positioning of Australia as a technologically advanced country. They encourage dilution and duplication of resources and activities at sub-critical mass. In order to move to an international level, universities need to make major investments in learning and research facilities and academic/research staff. Such large scale investments are not possible as long as funding models encourage a fragmented system of small institutions with widespread duplication. A new funding model that requires universities to operate as a cohesive network is fundamental to moving Australia's universities towards international standing.

3.4 The Illusion of Specialisation

In 2007, the Melbourne Institute conducted a study of specialisation in Australian universities. The specialisation results have been plotted against the average learning and research performance of Australia's universities (as abstracted from the Melbourne Institute 2006 study based on DEST data). This is shown in Figure 5.

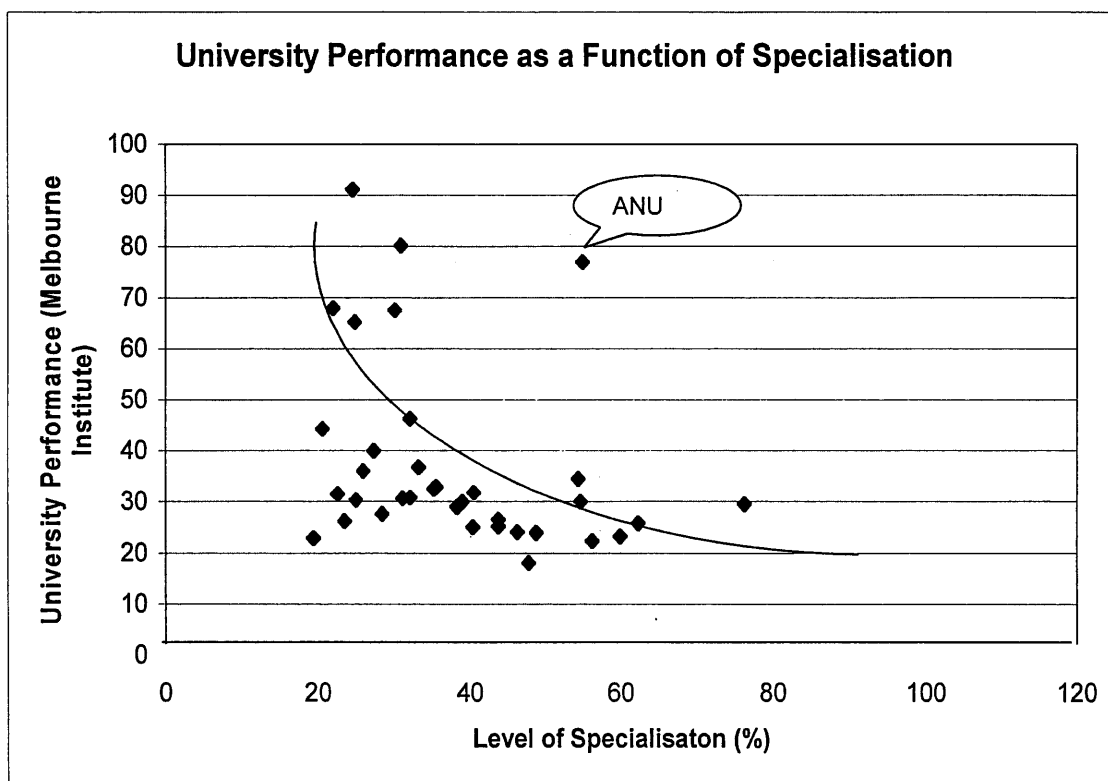


Figure 5 – Plot of University Performance against Claimed Specialisation

Essentially the results show that the more specialised that an Australian university claims to be, the poorer it performs overall (the only exception being ANU which has a low student:staff ratio and large resource base). In other words, generalist universities perform far better than those claiming to be specialised – ironically even in the areas where specialisation is claimed.

These results show that allowing universities to determine their own level of specialisation has simply not produced the intended outcomes. "Specialisation" in Australia has become a convenient euphemism for sub-critical-mass. The process has encouraged universities to become adept at cherry picking favourable statistics rather than benchmarking against world leaders.

As an example of the difficulties of allowing universities to make unchecked claims of specialisation, consider that one of Australia's most "specialised" universities (76.3% as per the Melbourne Institute 2007 Study), is one of the nation's poorest performers in its claimed field of specialisation – poorer than any of the generalist universities. The same university has listed on its website a staggering total of 361 academic programs (118 bachelor's and 243 postgraduate). This structure is operated with a total academic/research staffing of only 468 – in other words one academic degree program for every 1.3 staff (and a student:staff ratio of 37:1), with core expertise subcontracted out through academic sessional staffing, while administration overheads are retained in-house. The reality is that although universities claim to be specialised, even the small ones currently endeavour to be all things to all people and their performance suffers as a result.

Specialisation in Australian universities can only be genuine if the specialisation field benchmarks credibly against leaders in the chosen field (e.g., MIT for engineering, Harvard for medicine). Self-evidently, given the small scale of specialised universities, this is not generally the case in Australia.

3.5 Band-Aid Solutions

At various times, university leaders have put forward band-aid solutions to the current structural problems with Australian universities, in order to avoid addressing the impending need for fundamental reform of the system. These solutions have included transferring low level university entrants to preliminary (cheap) TAFE courses; creating teaching-only universities; increasing articulation levels, and so on.

These approaches:

- Confuse the fundamental differences in the roles of universities and TAFE to the potential detriment of both.
- Represent a "nickel-and-dime" approach to cost cutting at a time when the data suggests that major reform of the system is required.
- Avoid the need for important and fundamental decisions.

The most disturbing aspect of the sorts of band-aid solutions that are proposed is that they all have the same theme – that is, to find even more ways of subcontracting out core business in order to sustain non-core overheads, which should not be in the system in the first instance.

What does it say about the calibre of Australian universities in an international context, if they are able to subcontract out their core learning function to TAFE in order to cut costs? Or to become teaching-only entities (technical colleges) because governments have developed a "new paradigm" based upon the startling discovery that university research is costly, and it is cheaper not to have it than it is to have it?

In any event, the daunting international figures presented in this document highlight the overall futility of such piece-meal approaches in positioning Australia as a credible international provider of tertiary education.

In response to Question 21 of the Discussion Paper (Do you believe there is a place in Australia's higher education system for universities that are predominantly "teaching only" universities? If so, why?)

Australia already has "teaching only" universities – they are called TAFE colleges and they deal with transferring completed and agreed results of knowledge. Previously, teaching only universities were called colleges of advanced education and, more recently, polytechnics. TAFE colleges can already offer Bachelor's degrees and one has to ask what the value of new teaching only universities would be – other than to further confuse an already fragmented system. A university has to deal with knowledge related to unresolved problems – this cannot take place without research.

3.6 Underlying Problems that are Not Captured by Statistics

On the surface, the Australian university system appears to be performing its task, and hence the system is acceptable to Australians in its present form. We contend that this is not the case in practice. An underlying theme of the Discussion Paper is that the university sector performs its tasks well provided that there are many students going in and many students coming out – particularly if those students are international. We dispute that this is a sensible definition.

Fundamentally, in the long term, parts of the system are on a course to losing all credibility with the public and, more importantly, to the students within. With a national average student:staff ratio of 27:1, it is unlikely that any leading international universities would view the Australian system as a credible repository of knowledge – rather they would recognise the overall lack of depth and substance in the system. Those of us who have taught and conducted research within the system are also aware of the increasingly cynical view that students are developing about universities; the calibre of the resources, and education provided – this cynicism also extends to many academic staff. The more obvious causes that have been apparent for some time are the “*fee for degree*” culture that has developed in Australia but, even at a lower level, it is becoming clear to students that they are being used as a cash-cow to support a structure which clearly isn't performing as it should.

A major problem in Australian universities, which we have identified herein, is the bizarre practice that universities have developed of subcontracting out core business (knowledge and expertise) in order to sustain non-core overheads – invisible cost-cutting in order to artificially balance budgets. In essence, this is a clear case of asset stripping the sector of its ability to create knowledge in the international context. The lack of critical mass (knowledge) in the Australian sector does not need to be measured through costly and convoluted research assessment exercises – it is manifest in simple figures such as student:staff ratios; the net present value of decaying science/engineering infrastructure, and in declining technical support levels – again, invisible cost-cutting

In government, there has been a perception that “*if you can measure it, then you can control it*”. However, in the university system, many key performance indicators (KPIs) do not even measure performance – rather, they measure (often) meaningless outputs which, of themselves, do not relate to real quality. For example, number of students passed; number of research papers published and number of citations per paper. The difficulty with such small-scale output metrics is that they encourage universities to pursue maximisation (distortion) of parameters rather than genuine improvements in performance. In totality, most of the outputs that governments measure are ultimately a symptom of (or linear function of) broader structural parameters (such as student:staff ratios and university assets) rather than meaningful entities in their own right.

Moreover, each successive attempt at patching over distortions arising from small scale output measurements creates new measurement problems. For example, citation rates were introduced to discourage academics from publishing worthless papers – this, however, simply created problems with mutual citation (“*...you cite mine and I'll cite yours...*”). Endeavours to stop mutual citations in performance measurement led to the creation of citation loops (A cites B; B cites C, and C cites A).

We believe that successive governments have endeavoured to use small scale output parameters to performance manage the system into a state which cannot genuinely be achieved on the scale in which Australian universities currently operate. In particular, there appears to be a misconception that measurement can transform the system to a level commensurate with the world's leading universities. As demonstrated by Tables 1 and 2, and Figures 1 and 3, this is not possible without restructuring the system.

The attempts to realise unachievable performance levels by artificial means have created a house of cards built upon artificially small statistics – the broader (structural) statistics (i.e., student:staff ratios) show that the overall system is one that lacks depth of knowledge and substance. Artificial statistics, however, lead to subsequent artificial decisions until the entire system loses credibility. The Australian system is approaching such a point.

There is a growing body of evidence to support these contentions. In particular, Darbyshire (in the Collegian, 2008) states the case and the evidence very well and with some wit when he explains the artificial means by which cost cutting has been achieved:

“...Enter the armies of managers, auditors, spin doctors and ‘quality assurers’, all ostensibly there to work in ‘partnership’ with academics to enable them to ‘deliver value for money’ and ‘excellence’ to the new breed of educational ‘customers’ who have paid their money and who now demand their piece of paper, or degree, that such payment ‘entitles’ them to. And why should they not? If I went into a shop, handed over my payment for a tin of beans and didn’t receive the beans, I would not be best pleased...”

The above remarks are not to say that all is bad in Australian universities or that all is good overseas – in fact, many second and third tier US universities are poor performers – poorer indeed than many Australian universities. As a small country, however, Australia cannot afford to have such poor performers simply because they deprive the nation from having any world leading organisations.

Our national objective should be to create a system of universities which genuinely compares well with the world’s leaders – at best, our current system is not the best - on average it is poor in an international context and, in the worst cases, it can best be described as a technical college structure re-badged as universities.

What is good in Australian universities needs support and rescuing from what seems to be an inevitable decline in quality – that quality is defined by depth of knowledge rather than by small scale metrics that by-pass the underpinning, structural attributes of universities. Without arresting the current decline, Australia’s international education exports will eventually collapse, and recovery will take many decades if it is possible at all.

Damage within Australia may also be emerging, with significant declines in course acceptance rates (particularly in science, information technology and engineering), as per the DEEWR 2008 figures, at a time when jobs in such areas are strong.

In their simplest form, universities are receptacles that contain knowledge for the betterment of society – their calibre and standing ultimately come down to two simple issues:

- What is the quantity of knowledge in the receptacle (total number of academic/research staff)?
- What is the quality of the receptacle that contains the knowledge (resources/assets)?

All the other measurement techniques employed by government, in effect, mask the answers to these two basic questions. Ironically, however, all outputs and performance criteria that governments measure, with increasing complexity and at increasing expense, almost linearly depend upon these two elements.

4 The Case for Structural Change

The authors here believe that the case for significant structural reform of the Australian university system is both clear and unequivocal. Table 3 summarises the trend data from DEST; the Melbourne Institute and comparative attributes in the University of California.

<i>Parameter</i>	<i>Impact</i>	<i>Australian Universities</i>	<i>University of California</i>
Number of Academic & Research Staff	University performance is linearly related to academic and research staff numbers (Figure 1)	The largest Australian university is under 3,000 – the entire Australian system has 36,000 academic/research staff	39,000 academic and research staff
Non-Current Assets (Resources)	University performance is linearly related to assets (Figure 3)	Australia's resources are scattered over 37 universities	Structured management of assets over 10 campuses – endowments alone are 12 billion dollars
Student:Staff Ratios	University performance is inversely proportional to student:staff ratios which define the depth of knowledge within institutions (Figure 4)	Australia's average student:staff ratio is 27:1	Average ratio is 5:1
Specialisation	University performance in Australia is inversely proportional to claimed specialisation (Figure 5)	Specialisation is used as a euphemism for sub-critical mass	Generalist university structure with critical mass in chosen fields.

Table 3- Overall Attributes that Summarise the Case for Change in Australian Universities

The four parameters in Table 3 are key structural elements of university performance in learning and research and they must underpin any new structures that arise after the Review. In Table 4 we have quantised the Parameters from Table 3 so that universities can be classified as poor (score of zero); average (national potential - score of one) or good (international potential - score of two). Although the boundaries for these categories are arbitrary, we have selected them so that the bulk of universities in each case fall into the middle category.

<i>Parameter</i>	<i>Performance = 0 (Poor)</i>	<i>Performance = 1 (National)</i>	<i>Performance = 2 (International)</i>
Total Academic & Research Staff	0-600 No Depth	600-2000	2000+
Total Non-Current Assets (\$M)	0-600 Insufficient Resources	600-1200	1200+
Student/Staff Ratio	20+ Insufficient Knowledge Depth	10-20	0-10 World Class
Specialisation	40+ Too Narrow – Potential as Faculty only	25-40	10-25 Generalist University

Table 4 – Quantising the Performance of Australia's Universities Across Key Structural Attributes that Directly Relate to Learning and Research Performance

Table 5 shows what happens when the quantisation of Table 4 is applied to Australia's universities as per DEST 2006 statistics.

University	2006 Total Academic & Research Staff (DEST)	Staff Score (out of 2)	2006 Total Non-Current Assets (DEST) (\$000's)	Asset Score (out of 2)	2006 Student/Staff Ratios	Student/Staff Ratio Score (out of 2)	Melbourne Institute Specialisation %	Specialisation Score (out of 2)	Overall Structural Score (out of 8)
The University of Melbourne	2747	2	3613116	2	15.80	1	24.6	2	7
Monash University	2744	2	1866706	2	19.98	1	22	2	7
The University of New South Wales	2033	2	1744463	2	19.07	1	24.9	2	7
The University of Queensland	2781	2	1784353	2	13.49	1	30.2	1	6
The University of Sydney	2531	2	3589526	2	18.11	1	31	1	6
The Australian National University	1910	1	2273124	2	7.62	2	55	0	5
The University of Western Australia	1406	1	1437759	2	12.63	1	32.2	1	5
The University of Adelaide	1328	1	789085	1	14.53	2	33.3	1	5
Griffith University	1187	1	1052159	1	29.77	1	25	2	5
RMIT University	1060	1	1302162	2	39.10	0	39	1	4
The University of Newcastle	870	1	873812	1	29.39	0	22.6	2	4
Queensland University of Technology	1170	1	741590	1	32.93	0	27.4	1	3
Latrobe University	1074	1	801110	1	26.37	0	26	1	3
Curtin University of Technology	1057	1	673465	1	37.33	0	20.6	1	3
University of South Australia	967	1	773318	1	34.55	0	35.6	1	3
Deakin University	905	1	796904	1	36.69	0	31.2	1	3
University of Tasmania	749	1	366521	0	23.33	0	23.5	2	3
James Cook University	691	1	565672	0	22.25	0	19.4	2	3
University of Technology, Sydney	875	1	1031466	1	37.39	0	40.5	0	2
Macquarie University	861	1	1047670	1	36.15	0	54.4	0	2
University of Western Sydney	747	1	776936	1	44.09	0	28.5	0	2
University of Wollongong	742	1	516986	0	29.48	0	35.3	1	2
The Flinders University of South Australia	706	1	214569	0	21.84	0	62.3	0	1
Victoria University	586	0	644039	1	34.44	0	43.8	0	1
Edith Cowan University	559	0	688817	1	42.91	0	56.2	0	1
Murdoch University	528	0	446229	0	26.36	0	32.2	1	1
University of Southern Queensland	450	0	224568	0	56.10	0	38.3	1	1
Charles Sturt University	588	0	599388	0	58.07	0	43.8	0	0
The University of New England	505	0	317632	0	34.62	0	54.7	0	0
Swinburne University of Technology	468	0	473974	0	37.16	0	76.3	0	0
Central Queensland University	416	0	168710	0	60.83	0	40.4	0	0
Australian Catholic University	372	0	171917	0	37.55	0	70	0	0
University of Canberra	328	0	287860	0	33.10	0	59.9	0	0
Southern Cross University	268	0	165522	0	51.80	0	48.8	0	0
University of Ballarat	211	0	264107	0	49.43	0	46.3	0	0
Charles Darwin University	192	0	230479	0	28.10	0	47.8	0	0
University of the Sunshine Coast	121	0	127091	0	47.83	0	100	0	0

Table 5 – Ranking Australia's Universities According to Quantised Performance Across Key Structural Criteria

The results in Table 5 would be unsurprising to academics who work in the sector, except that they show that 19 of Australia's universities currently have major structural flaws – largely as a result of their small size. An additional seven universities are only marginal in a structural sense.

One could argue about the exact numbers based on the arbitrary nature of our quantisation but, in the final analysis, there are somewhere between 15-25 of Australia's universities that urgently require major reform in the short term – low end players realistically only have a future as faculty nodes of larger universities or as technical colleges – perhaps integrating with TAFE. Even at the top end of the spectrum we note that relative to international leaders, Australia's best performing universities are small players facing the analogous structural problems at an international level. We believe that overall reform can therefore be best achieved by adopting the University of California approach and networking the university structure in each state to maximise impact and reduce waste and duplication.

We recognise that there are significant challenges to reform, both from vested interests seeking to preserve their current fiefdoms, and from political interests endeavouring to use universities as electoral tools. Nevertheless, we believe that for a small country such as Australia, the move towards state based university networks analogous to the University of California model is essential and inevitable.

What remains to be seen is how long the inertia in the current system will act to avoid a collapse and the subsequent, inevitable change which may then come too late.

In response to Question 31 of the Discussion Paper (Is it time to reshape tertiary education in Australia and streamline financing and regulatory arrangements? If so, what structural changes would you make and why?):

It is time to reshape tertiary education in Australia. The current system is fragmented, inefficient and far too small to have a long term future on the world stage. No amount of tinkering will fix this problem – the time has come for fundamental reform. To paraphrase Einstein, "...in order to avoid insanity the government should consider doing something different if it wants a different, and quite possibly better, result..."

5. Proposed Future Directions

Stage	Action	Comment
1	The Federal Government needs to impose a threshold size for academic/research staff employed by tertiary institutions before funding them as universities (e.g., 2000 academic/research staff). This will ensure that those institutions funded by the government as "universities" have the potential to achieve credible international levels.	Smaller institutions can become faculty or divisional nodes of larger universities. Multi-sectoral institutions which do not have critical mass as universities in their own right have the additional option of becoming super-TAFE colleges (polytechnics).
2	Universities in each state should negotiate and develop a statewide network compact, identifying international strengths for each node, and developing a strategy to eliminate duplication – compacts should consider regional issues and SES requirements	Statewide compact presented to Federal Government with roadmap of international strengths prior to establishment of individual compacts with node universities.
3	Federal Government compacts with individual universities follow on from the statewide compact developed by universities	
4	Federal Government monitoring of university learning and research performance for each node (including infrastructure, technical support, etc.), through international benchmarking in areas of claimed specialisation.	
5	Changes to Acts of Establishment; legislative and funding changes to facilitate establishment of state based university networks	Universities can retain historic identities for branding purposes – the state based entity does not need to become a brand in its own right.

Table 6 – Proposed Sequence of Events to Rationalise the University Sector

6. Concluding Remarks

The 2008 Review of Higher Education represents a fork in the road. The Review Panel can either condemn Australia's higher education sector to another decade of "*more of the same*", with minor bureaucratic variations and funding agreements re-badged as "compacts", or else build a pathway to a new higher education sector which can genuinely compete in the international arena.

The evidence presented in this document, derived from independent studies, DEST and various university statistics is compelling and shows that:

- (i) Australia's university sector represents a small, fragmented, inefficient, piece-meal approach to higher education, which is parochial and founded on small scale local issues, rather than the development of a genuinely international system.
- (ii) As a consequence of (i), the system contains duplication and waste which compound the intrinsic problems of a small sector and prevent the system from being a credible international player. Tax-payers should not be left to fund duplication and waste for another decade. Genuine and fundamental reform is required now.

Fragmentation, duplication and waste in the sector are manifest in a single parameter that defines the credibility of the core business and the depth of knowledge contained therein – the student:staff ratio. In universities this ratio is not just a simple workload issue but a core attribute that defines the substance and quality of a university. At the University of California this ratio is approximately 5:1 – across the Australian university system, this ratio averages 27:1 (DEST 2006). If nothing else, this should send alarm bells ringing that there is something manifestly wrong with the Australian system.

By recognising the intrinsic weaknesses and fragmentation of the existing system of universities, and moving towards networked (state-based) university models, along the lines of the University of California, Australia can:

- Achieve a world class university structure with world class infrastructure and resourcing.
- Achieve international levels of critical mass in its chosen fields of endeavour.
- Reduce or eliminate duplication and waste in the sector.
- Convert funds currently allocated to duplication and waste to increased university depth, and better and broader opportunities for Australian university students.

The recommendations of the Review Panel will leave a legacy that will have impact for more than a decade. We therefore leave the Review Panel to ponder the implications arising from the thoughts of Albert Einstein which appear on the cover of this submission. Specifically,

Does the Review Panel genuinely believe that, by continuing to do the same things over and over for the next decade, the Australian university system will achieve different outcomes to those that currently exist?

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